

# New York State Department of Transportation

## Yellow Flag NB2358W011

By: Alex Abreu

Flag Date: May 05, 2023

Superseding Information:

No Flags Superseded

### Structure Information

**BIN: 1065318**

**Feature Carried: 278I278IX2M23027**

**Feature Crossed: 6TH AVENUE**

**Orientation: 8 - NORTHWEST**

**Region: 11 - NEW YORK CITY**

**County: KINGS**

**Political Unit: City of NEW YORK**

**Approximate Year Built: 1962**

**Posted Load Matches Inventory : Yes**

**Bridge Load Posting (Tons) : Not Posted for Load**

**Primary Owner: New York State Department of Transportation**

**Primary Maintenance Responsibility: 12 - State - Subcontracted to another Party**

**Typical or Main Span Type: 3 - Steel, 02 - Stringer/Multi-Beam or Girder**

**This Bridge is not a Ramp**

**Number of Spans: 322**

### Verbal Notification Information

**Person Notified: Heinz Joachim, P.E.**

**Date: May 12, 2023 12:30:00 PM**

**Of: NYSDOT Region 11**

### Signature Information

**Signature: Alex Abreu, P.E. 099761-1**

**Date: May 21, 2023**

**Reviewed By: Robert Kemp**

**Date: May 22, 2023**

**Attachments: 7**

**Flagged Elements**

Parent Element	Element	Total Quantity	Unit
<b>Span Number : 290</b>			
	113 - Steel Stringer	1562	ft

**Flagged Condition Description**

This Yellow Flag No. NB2358W011 is NEW.

Location: Span 290, Stringer S1 at end side of Floorbeam FB3 above the center lane of Hamilton Avenue WB roadway near 15th Street.

**Description:**

The end of Stringer S1 in Span 290 at the end side of Floorbeam FB3 exhibits severe section loss for the full height of the web along the connection angle with 0.12"-0.25" remaining thickness measured (RTM), resulting in approximately 38% to 70% section loss with average 54% section loss for full stringer web height. The stringer web exhibits two corrosion holes adjacent to the connection angle for 5"H x 2"W in the upper web and 2-1/2"L x 1"-2-1/2"H in the lower web. The overall shear web area section loss is approximately 61%. Four rivets at the left face of the stringer exhibits section loss for 25% in two rivets at the upper web and 50%-75% in two rivets in the lower web. Two rivets at the right face of the stringer exhibits 25% section loss in the lower web. The right side bottom flange exhibits 10"L x 3"W corrosion hole at the edge of the flange with 30% section loss surrounding the hole followed by 20% section loss for the full width of the flange for 12" long. The left connection angle exhibits 25% section loss for full height of connection angle with 20%-40% bolt loss. The right connection angle exhibits no significant defects. (refer to Flag Condition Sketch Photo #2 for more details)

This is a newly flagged condition.

**Notes:**

1. The above flagged stringer is curb stringer that is a built up steel channel member with bottom flange located on the right side of the stringer and does not receive direct live load, but supports the barrier/railing above on I278.
2. The other end of the above flagged stringer is located at the begin side of Floorbeam FB4 and has newly installed steel reinforcement plates and angles.
3. Adjacent Stringer S2 exhibits no significant defects.
4. A double lane closure in the left and center lanes on WB roadway and 125ft manlift are required to access this location.
5. The previous 2021 Biennial Inspection report did not have any defects documented at the above flagged stringer.

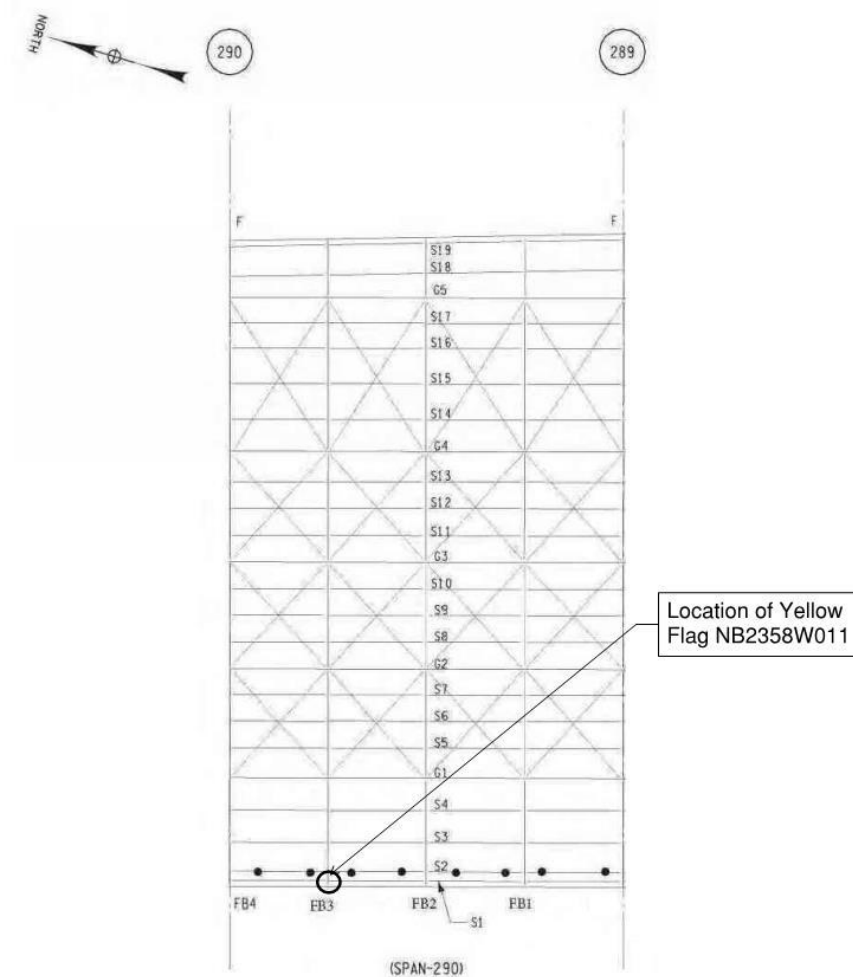
**Flag Photographs**Photo Number: **1**Photo Filename: **23\_Flag Location Plan.jpg**Gowanus Expressway  
2023 Biennial Inspection - Field SketchBIN: 1065318Team: AA/TSDate: 05/05/2023Span: 290Location: Stringer S1 at Floorbeam FB3**Yellow Flag Location Plan****wsp****Attachment Description: Flag Location Plan**

Photo Number: 2

Photo Filename: 23\_Span 290\_Floorbeam FB3\_Stringer

Gowanus Expressway  
2022 Biennial Inspection - Field Sketch

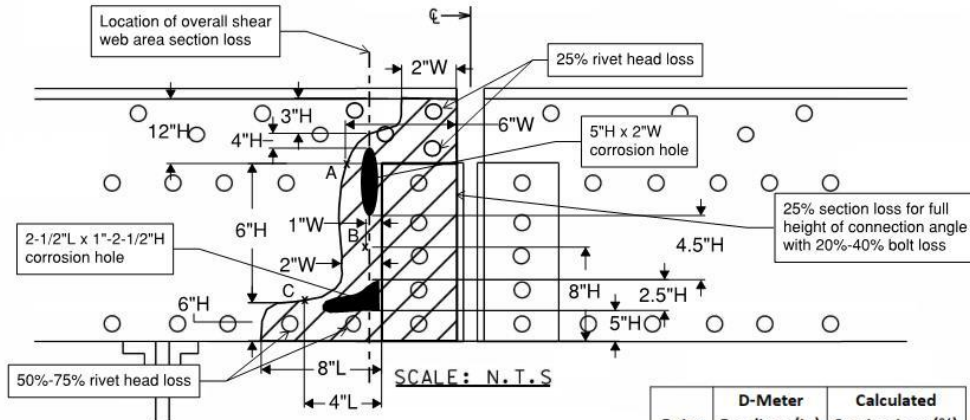
BIN: 1065318

Team: AA/TS

Date: 05/05/2023

Span: 290

Location: Stringer S1 at Floorbeam FB3

**Left Face of Stringer S1****Overall Shear Web Area Section Loss:**

Shear web area:

$$5" \times 0.25" [\text{Point C}] + 2.5" \times 0" [\text{Corrosion hole}] + 4.5" \times 0.18" [\text{Point B}] + 5" \times 0" [\text{Corrosion hole}] + 4" \times 0.12" [\text{Point A}] + 3" \times 0.40" = 3.74 \text{ in}^2$$

Overall shear web area section loss:

$$((24" \times 0.40") - 3.74 \text{ in}^2) / (24" \times 0.40") \times 100 = 61\%$$

**Notes:**

-As-measured web thickness is approximately 0.40".

-Stringer S1 is a steel channel member. The bottom flange of the channel member is located at the right side. The bottom flange exhibits 10"L x 3"W corrosion hole at the edge of the flange with 30% section loss surrounding hole followed by 20% section loss for full width of flange for 12"L. (Not shown in sketch since left face of stringer has full web height of curb stringer with readings taken at left face)

-Section Loss Calculations:

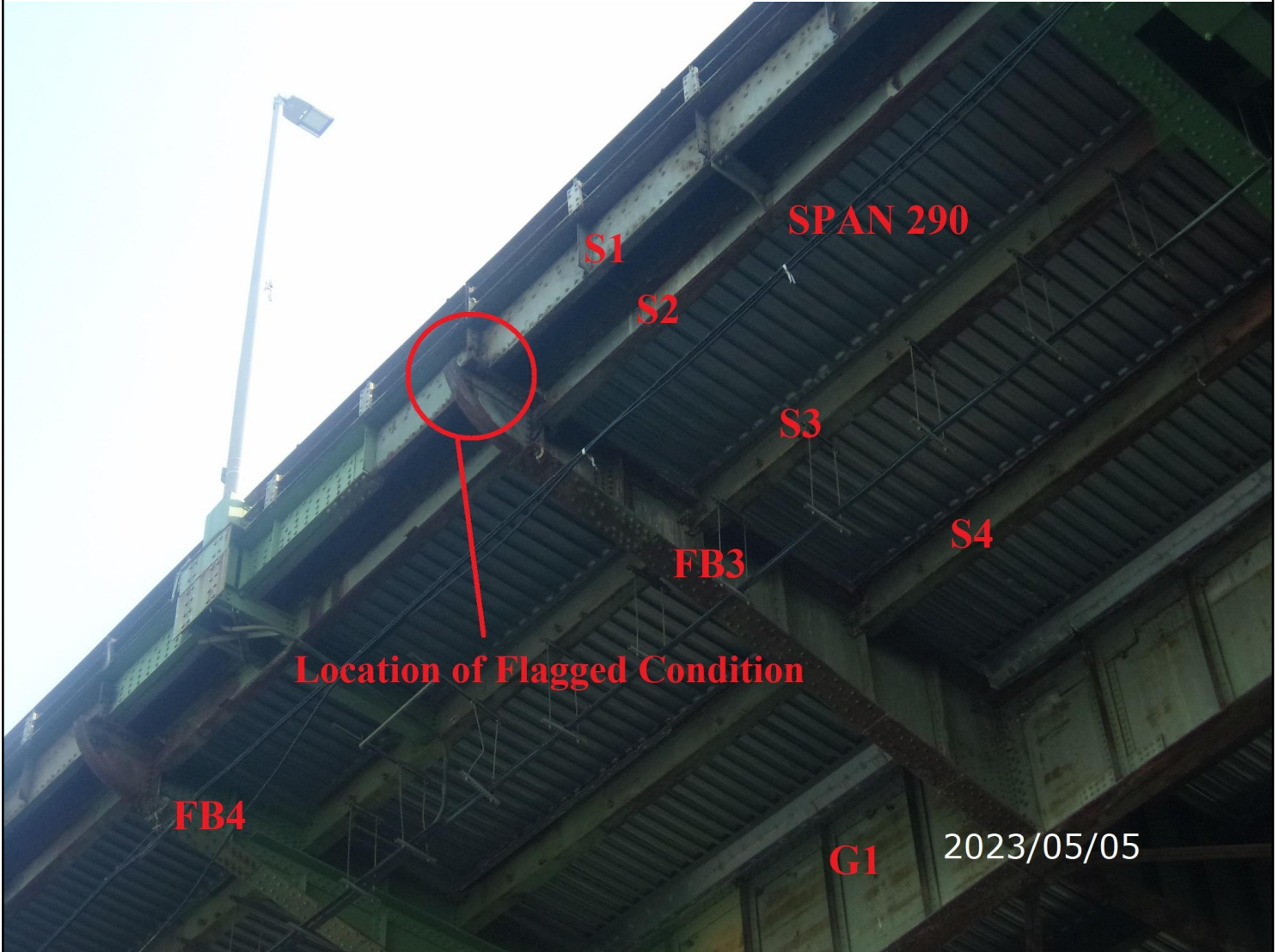
Point A:  $(0.40" - 0.12") / 0.40" = 70\%$ Point B:  $(0.40" - 0.18") / 0.40" = 55\%$ Point C:  $(0.40" - 0.25") / 0.40" = 38\%$ Average Section loss:  $(70\% + 55\% + 38\%) / 3 = 54\%$ 

wsp

**Attachment Description: Flag Condition Sketch**

Photo Number: 3

Photo Filename: 23\_113\_7001.jpg



**Attachment Description:** General view of the flagged condition at Stringer S1 on the end side of Floorbeam FB3 in Span 290. Looking End and Right.



Photo Number: 4

Photo Filename: 23\_113\_6906.JPG

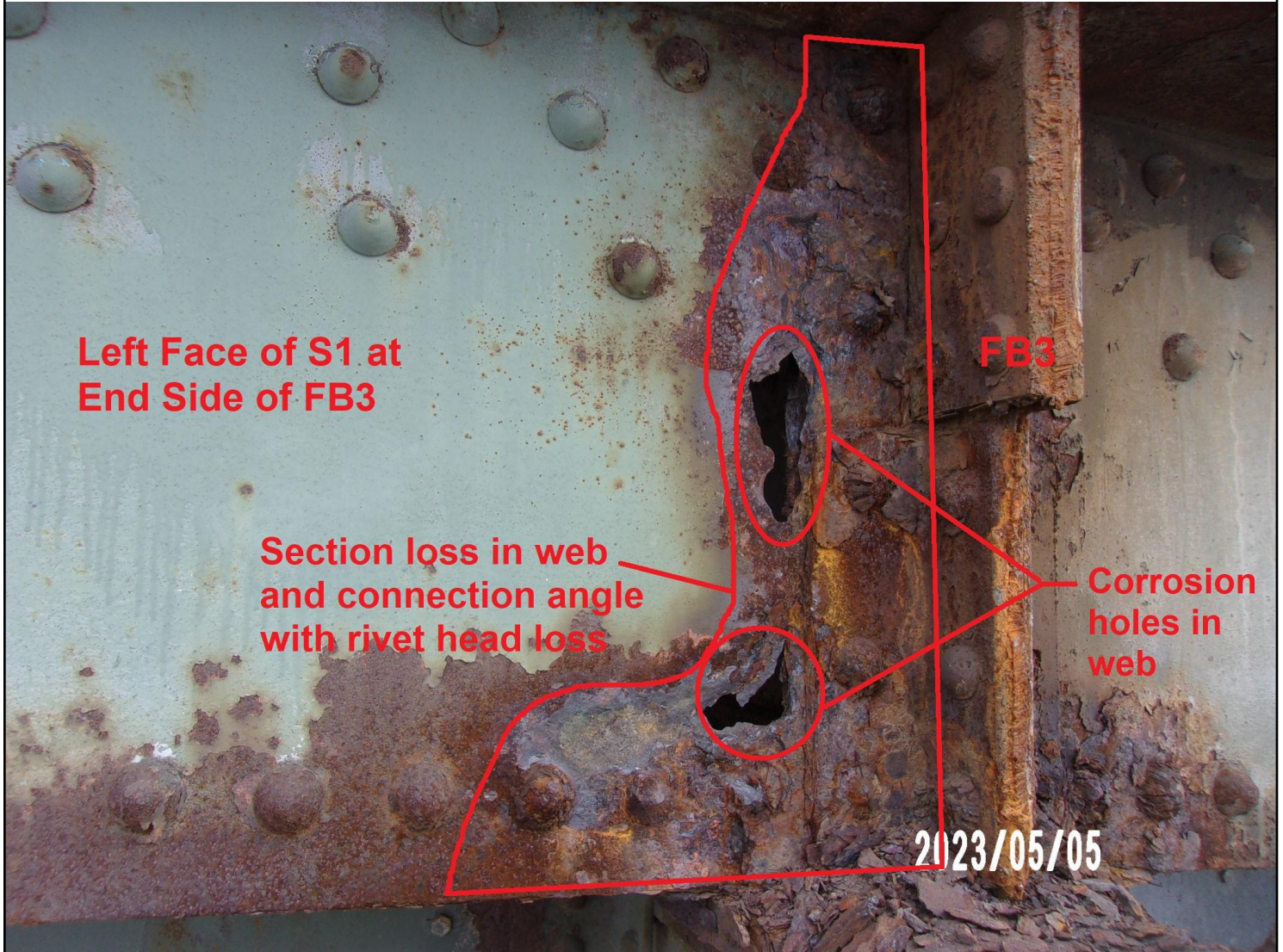


**Attachment Description:** Close up general view of the flagged condition at Stringer S1 on the end side of Floorbeam FB3 in Span 290. Looking Begin and Right.



Photo Number: 5

Photo Filename: 23\_113\_6897.JPG

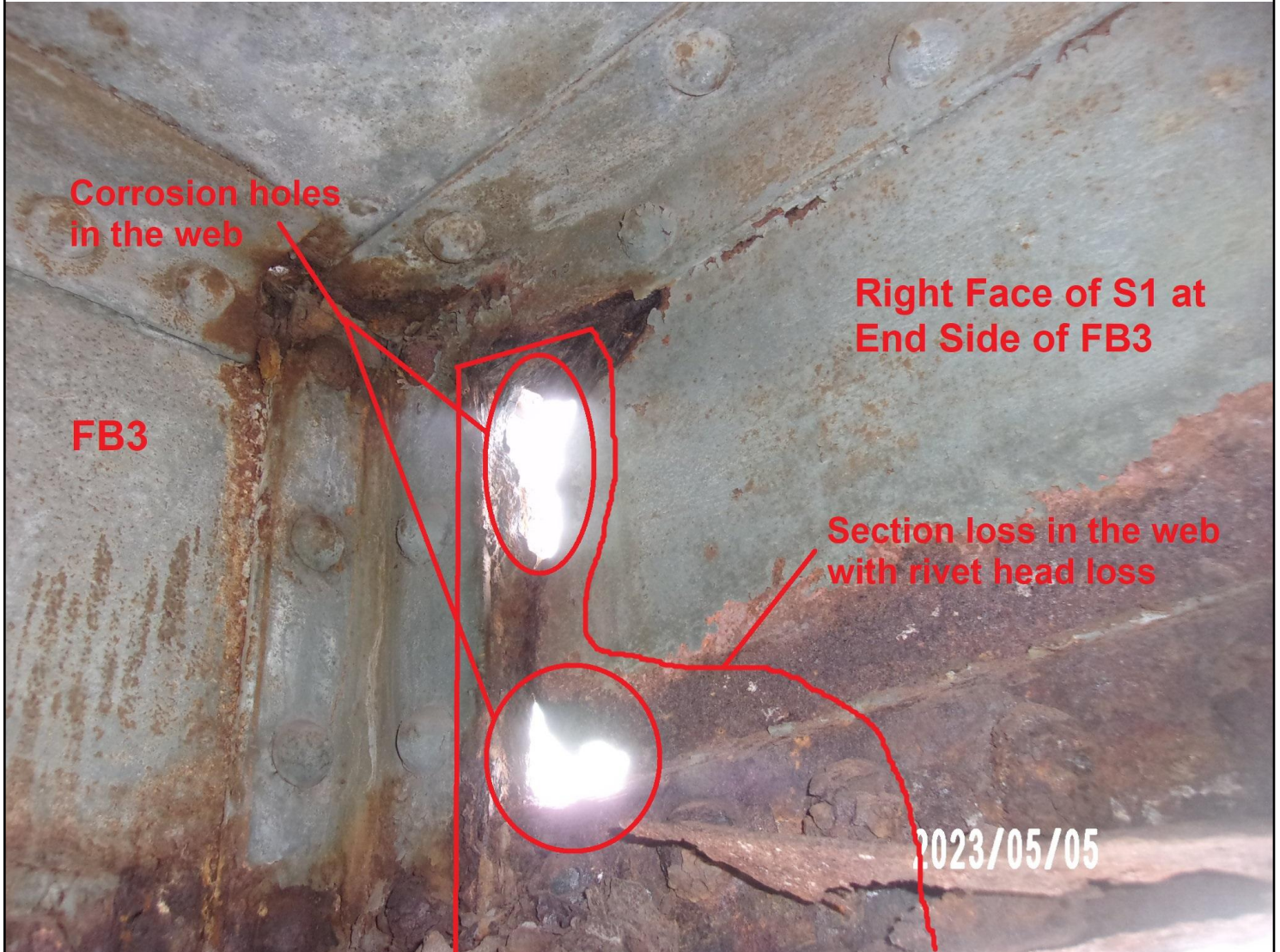


**Attachment Description:** The left face of Stringer S1 at the end side of Floorbeam FB3 in Span 290. The stringer exhibits severe section loss with two corrosion holes in the web with rivet head loss in the upper and lower web. Also, the connection angle exhibits section loss for the full height with bolt loss. Looking Right.



Photo Number: 6

Photo Filename: 23\_113\_6898.JPG



**Attachment Description:** The right face of Stringer S1 at the end side of Floorbeam FB3 in Span 290. The stringer exhibits severe section loss with two corrosion holes in the web with rivet head loss in the lower web. Looking Begin and Left.



Photo Number: 7

Photo Filename: 23\_113\_6900.JPG



**Attachment Description:** The bottom of Stringer S1 at the end side of Floorbeam FB3 in Span 290. The right side bottom flange exhibits corrosion hole at the edge with section loss surrounding the hole. Looking Begin.